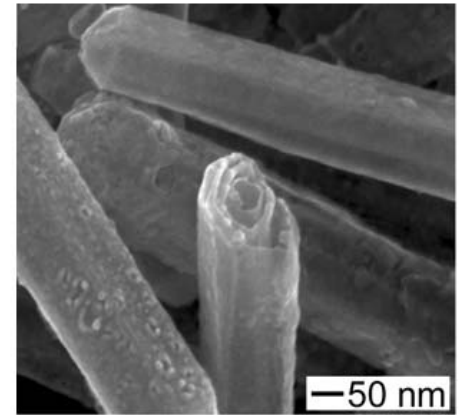
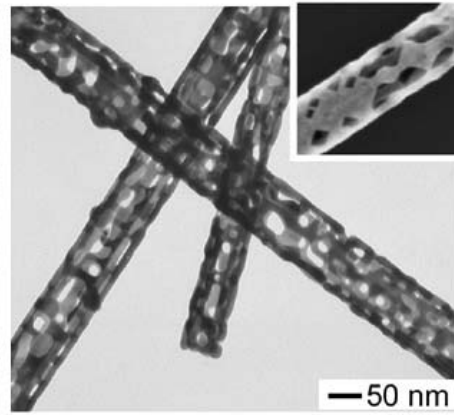
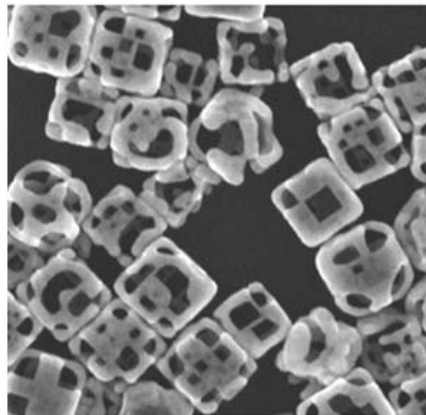
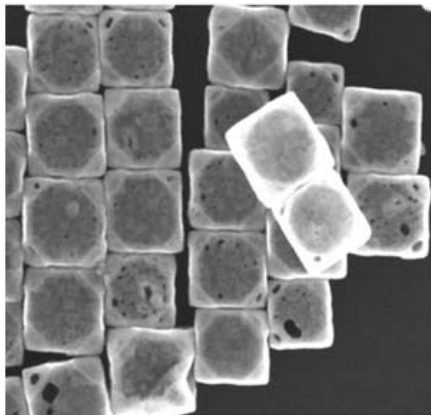


Metal Nanostructures with Hollow Interiors

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The galvanic replacement reaction between Ag nanostructures and an aqueous solution of HAuCl_4 has been demonstrated as a simple and versatile method for preparing metal nanostructures with well-defined hollow interiors and wall thickness. It was also possible to form multi-walled, nanoscale tubes, shells, and rattles by combining this reaction with electroless plating of silver. This work offers an effective means for tuning the surface plasmonic and mechanical properties of metal nanostructures (see, for example, *J. Am. Chem. Soc.* 2004, **126**, p. 3892 and p. 9399; *Adv. Mater.* 2004, **16**, p.264).



Other Accomplishments

- Supervision of 5 undergraduates enrolled for the independent study (with a total of 15 credits) and 2 REU summer students. Two of them co-authored 2 articles recently published in *J. Am. Chem. Soc.* (2003) and *Chem. Phys. Lett.* (2004).
- Supervision of a junior student from the Mercer Island High School in the summer of 2003, and he was recently admitted to UC Berkeley as a science major. Based on his work in my group, he was selected as one of the semi-finalists of the Siemens Westinghouse Competition.
- Serving as a guest lecturer for the ACS-PRF summer school organized by the Eastern Michigan University.
- Serving as co-organizers of symposia for MRS, ACS, APS, and SPIE.
- Serving as the associate editor of *Nano Letters*.
- Serving as the guest editor for a special issue on Surface Patterning that will be published in *Adv. Mater.* (August, 2004).